

Technical Disclosure Commons

Defensive Publications Series

September 22, 2017

Displaying web pages within a software keyboard

Dong Kim

John Arendt

Follow this and additional works at: http://www.tdcommons.org/dpubs_series

Recommended Citation

Kim, Dong and Arendt, John, "Displaying web pages within a software keyboard", Technical Disclosure Commons, (September 22, 2017)
http://www.tdcommons.org/dpubs_series/683



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.

Displaying web pages within a software keyboard

ABSTRACT

Techniques described in this disclosure display entire web pages with a display area of a software keyboard. In response to user selection of a search result, an optimized version of a web page is retrieved and displayed in the display area. Use of optimized versions of web pages ensures that the software keyboard does not experience crashes or performance problems, e.g., due to inefficient web pages, web pages that include incompatible content, etc. Display of entire web pages in the keyboard display area saves the user the effort to switch to a browser application to view the web page to determine whether the search result is satisfactory.

KEYWORDS

- software keyboard
- virtual keyboard
- AMP
- smart keyboard

BACKGROUND

Software keyboards are widely used, e.g., on touchscreen devices such as smartphones, tablets, wearable devices, etc. Such keyboards are displayed in a portion of the overall screen, e.g., at the bottom of the screen. Some software keyboards can display additional content, e.g., suggested words or emoji, suggested image, search results, etc. within a display area allotted to the keyboard. Due to the constraints of display space, displaying web pages within a software is difficult. For example, web pages that are designed for larger displays may not render properly, e.g., if it doesn't fit the constraints of the available display area or does not conform to mobile screen size restrictions. Further, web pages that include a lot of scripts or are bloated may be

difficult to render and not suitable for display within a software keyboard. Scripts and other features on some web pages can also lead to crashing of the software keyboard.

DESCRIPTION

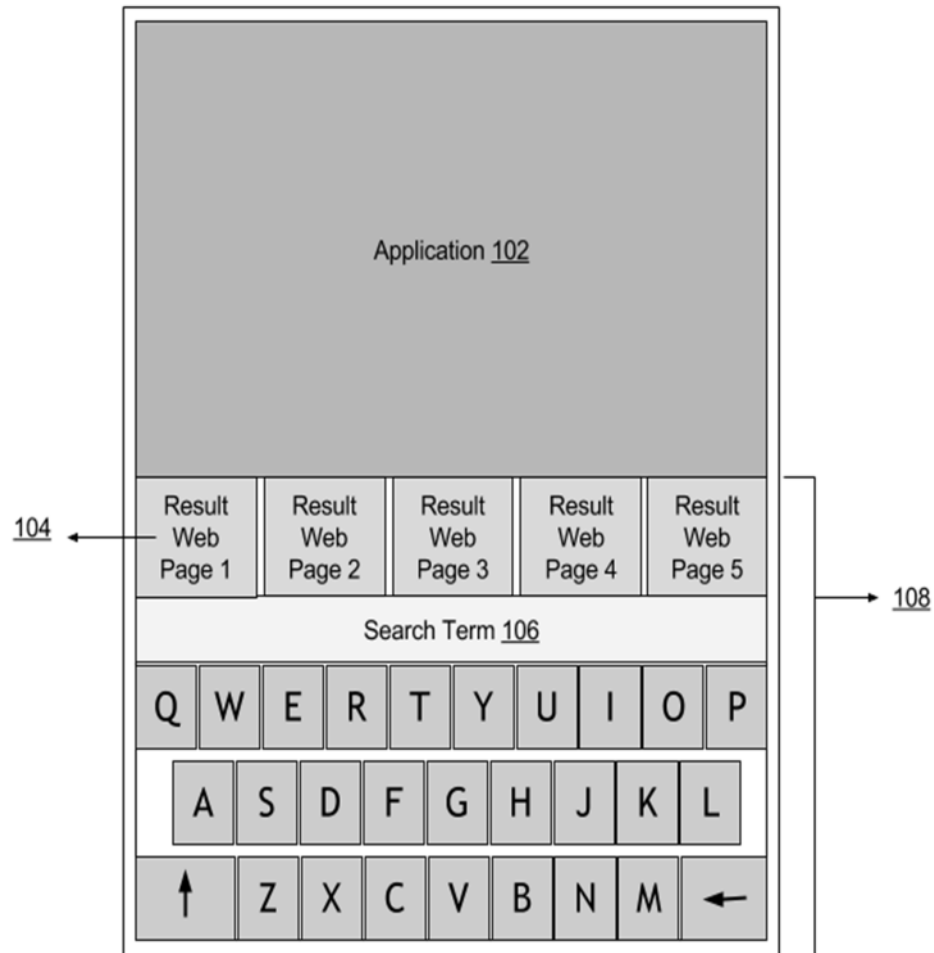


Fig. 1: Software keyboard with thumbnail search results display

This disclosure enables users of a device with a software keyboard to perform a search (e.g., an Internet search) from within the keyboard. The search results are shown in a manner similar to that in a mobile browser, and are restricted to a small number, e.g., ten. Fig. 1 illustrates a mobile device where an application (102) is currently under execution, and a software keyboard (108) is displayed on screen. A user has entered a search term (106). In

response, a search is performed and search results are obtained (104). Display of the search results includes, for example, a title, a thumbnail image, and/or a short snippet of text from the web page that is identified as matching the search term. Search results are displayed in this manner to ensure performance, and to ensure that the results can be viewed by the user within the available display area.

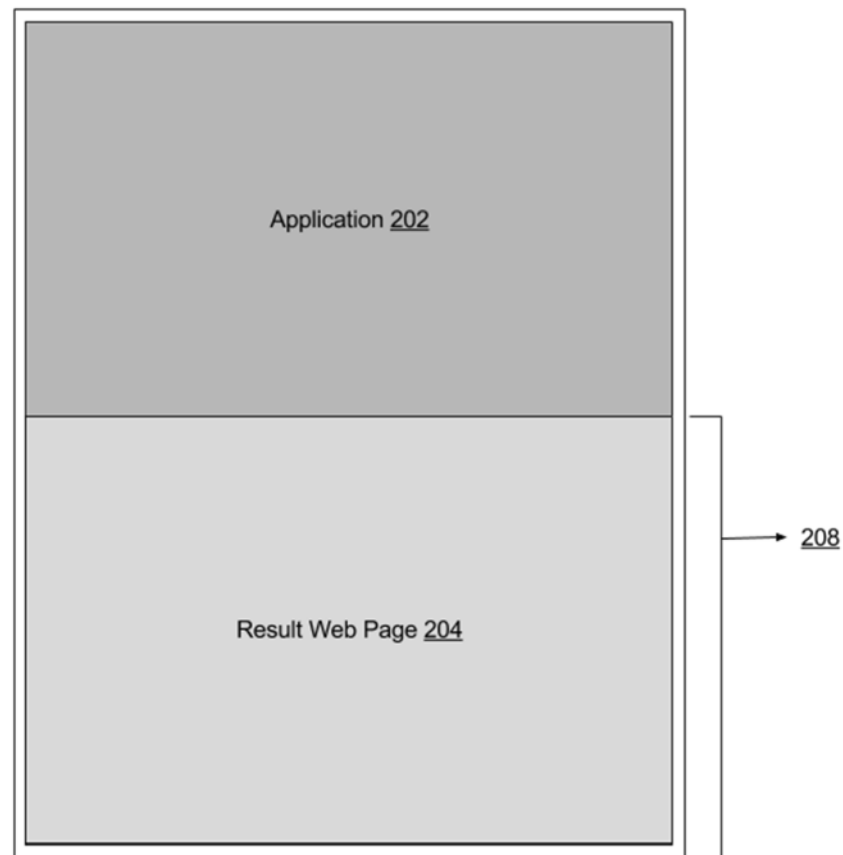


Fig. 2: Software keyboard with entire web page display

Some web pages are available in optimized versions that are fast and easy to render. For example, such optimized versions may be compliant with standards such as Accelerated Mobile Pages (AMP) project, Instant Articles (Facebook), Apple News, etc. This disclosure leverages the availability of such web pages to display the entire web page within the keyboard display

area, when a user selects a search result. Fig. 2 illustrates an example where an entire web page (204) is displayed in the display area (208) of the keyboard in response to user selection of a particular search result thumbnail. As shown in Fig. 2, the keyboard portion with the software keys is hidden from display. The entire web page is shown while the application (202) is in focus.

It is determined, e.g., based on search engine information, whether a web page corresponding to a search result is available in an optimized version. If available, the optimized version is rendered in the keyboard display area when the user selects the search result. This enables the user to determine that the search result matches the user query, and to perform further actions. For example, if the software keyboard is utilized while a messaging application is in focus, the user can share the search result to the messaging application.

However, if a user attempts to follow links with the optimized version of the page, e.g., to other, non-optimized pages, a user's attempt to load these pages (which may be heavy, include scripts, etc.) can cause the software keyboard to crash. To prevent such crashes, links are omitted when displaying the web page in the keyboard, or only such links are displayed that themselves link to other optimized pages.

Another way to implement this functionality is to utilize a proxy between the user's device and the web page that parses the web page and returns a suitable version, e.g., plain text, to the software keyboard. However, such display can lead to the exclusion of web page components such as images, formatting, design elements, etc.

Display of entire web pages in the keyboard display area saves the user the effort to switch to a browser application to view the web page to determine whether the search result is satisfactory.

CONCLUSION

Techniques described in this disclosure display entire web pages with a display area of a software keyboard. In response to user selection of a search result, an optimized version of a web page is retrieved and displayed in the display area. Use of optimized versions of web pages ensures that the software keyboard does not experience crashes or performance problems, e.g., due to inefficient web pages, web pages that include incompatible content, etc. Display of entire web pages in the keyboard display area saves the user the effort to switch to a browser application to view the web page to determine whether the search result is satisfactory.